

Using a Life-Stage Approach for Assessment of Children's Health Risk

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Science Question

What is the basis for differential risk? What are the outcomes that need to be considered in a life-stage focused risk assessment framework? What is the impact of exposure to environmental pollutants throughout development on human health outcomes? How do we incorporate data on susceptible populations into the risk assessment process?

Research Goals

Incorporate into risk assessment a focus on life stage-specific considerations for exposure and effects in order to better characterize the risk to susceptible groups within the population.

Results/Conclusions

Summary of gap analysis:

- Identify needs for specific areas for guidance
 - Application of developmental and reproductive outcomes to risk assessments for various durations.
 - Dose-response assessment for developmental data
 - Pharmacokinetic modeling
 - Life-stage specific application of mode of action to risk assessment
- Identify training needs and training tools.

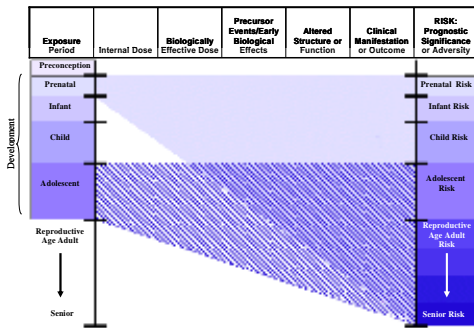
Impact and Outcomes

This framework addresses the question of why and how an improved children's health risk assessment will strengthen the overall risk assessment process across the Agency. The value added of this approach includes:

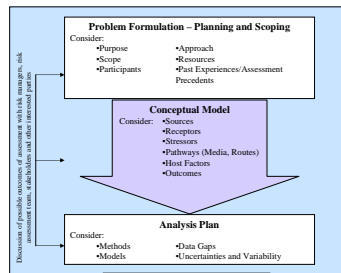
- A more complete evaluation of the potential for vulnerability at different life stages.
- Evaluation of potential for toxicity after exposure during all developmental life stages.
- Integration of adverse health effects and exposure information across life stages, and
- A focus on the underlying biological events and critical developmental periods for incorporating mode of action considerations.

Future Directions

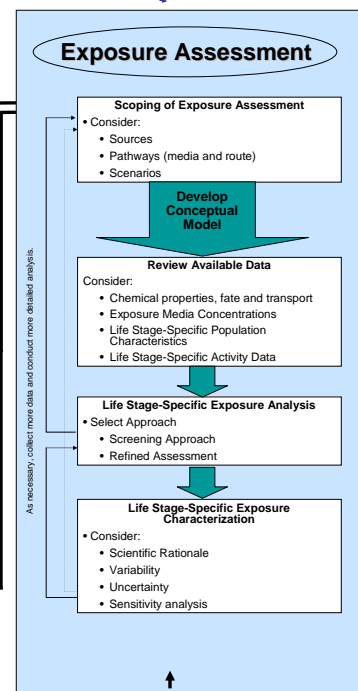
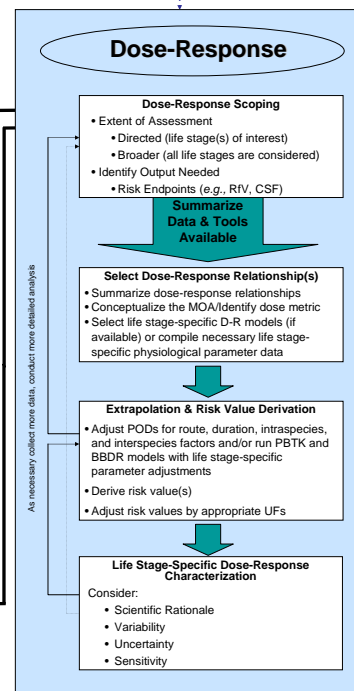
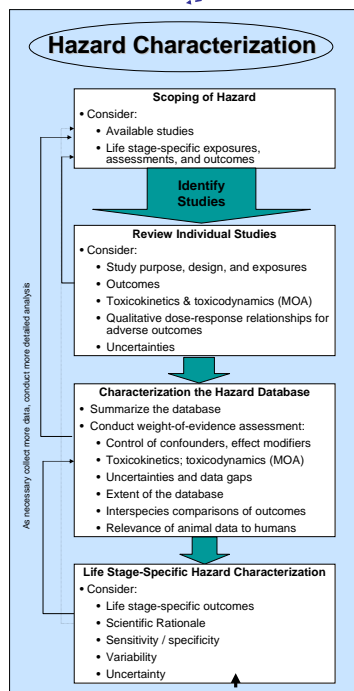
- Get Framework externally reviewed
- Develop chemical specific case studies
- Develop adjunct guidance where needed
- Develop training for Program Offices and other risk assessors
- Apply life stage-specific approach in future assessments.



Problem Formulation



Analysis



Risk Characterization

Synthesis of and integration of hazard, dose response and exposure information.
Summary of uncertainties and assumptions used in assessment including variability and uncertainty in database.
Describe risk context.



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